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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/482,060	01/13/2000	David P. Wieczorek	051252-5029	6503
9629	7590	10/23/2003	EXAMINER	
MORGAN LEWIS & BOCKIUS LLP 1111 PENNSYLVANIA AVENUE NW WASHINGTON, DC 20004			KIM, CHRISTOPHER S	
			ART UNIT	PAPER NUMBER
			3752	25
DATE MAILED: 10/23/2003				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/482,060

Applicant(s)

WIECZOREK ET AL.

Examiner

Christopher S. Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2 and 10-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-19 is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 December 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Amendment filed August 18, 2003 is acknowledged.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Drawings

3. The drawings were received on December 9, 2002 (Applicant's cover letter dated September 13, 2002). These drawings are not acceptable. Although the contents are approved, the quality of the drawings is not. The drawings are objected to for poor quality of paper, characters, lines and numbers.

The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Specification

4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: "so that a portion of the slot is tangential to the central aperture" recited in claim 10.

Claim Rejections - 35 USC § 103

5. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daley et al. (4,971,254).

With respect to claim 1, Daley et al. discloses a fuel injector having a fuel inlet 14; a fuel outlet 12; a body 10; an armature (inherent); a cylindrical needle 16; a seat 20; a swirl generator 18. Daley et al. does not disclose the swirl generator having a guiding member contiguous to a flat disk. Forming the swirl generator of two elements (such as the disc member 22 and retainer member 24 of Daley et al.) is a mere separation of parts. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have formed the swirl generator of Daley et al. from two elements (two flat disk like elements) to ease manufacturing, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. *Nerwin v. Erlichman*, 168 USPQ 177, 179.

The function recitation "when the body is exposed to operating temperatures of a cylinder of an engine" is not a positively cited limitation which only requires the ability to so perform. As applicant has clarified in the response filed on October 5, 2001, applicant is not claiming a cylinder of an engine.

Daly et al. is silent as to being a direct or indirect fuel injector. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have applied the teachings of Daly et al. to a direct injection fuel injector to increase the divergence of the column of fuel.

With respect to claim 2, Daly et al. discloses the limitations of the claimed invention with the exception of the range of the inner and outer diameter of the cylindrical annulus. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have made the inner diameter of the cylindrical annulus no more than 50% greater than the diameter of the cylindrical needle and the outer diameter of the cylindrical annulus no less than 100% greater than the inner diameter of the cylindrical annulus, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Allowable Subject Matter

6. Claims 10-19 are allowed.

Response to Arguments

7. Applicant's arguments filed August 18, 2003 have been fully considered but they are not persuasive.

In response to applicant's argument Daley does not disclose a seat with a circumferential portion disposed within a nozzle directly connected to the interior surface of the nozzle, Daley's seat 20 is directly connected to the interior surface of the body 10 above the O-ring.

In response to applicant's argument that Daley does not show a guide disk and a flat disk (a two piece swirl generator with parallel surfaces), claim 1 is rejected under 35 USC 103.

All other issues have been addressed in the prior Office action.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher S. Kim whose telephone number is (703) 308-8336. The examiner can normally be reached on Monday - Thursday, 6:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Y. Mar can be reached on (703) 308-2087. The fax phone numbers

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for the organization where this application or proceeding is assigned are (703) 872-9302 for regular communications and (703) 872-9303 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.



Christopher S. Kim
Primary Examiner
Art Unit 3752

CK
October 23, 2003